```
=> e WE43/cn
E1            1     WE34/CN
E2            1     WE42/CN
E3            1 --> WE43/CN
E4            1     WE43A/CN
E5            1     WE54/CN
E6            1     WE54A/CN
E7            1     WE56/CN
E8            1     WEA 03C/CN
E9            1     WEA 03G/CN
E10           1     WEA 05E/CN
E11           1     WEA 05E/S136/CN
E12           1     WEA 05E107B/CN

=> s e3
L1            1 WE43/CN

=> d

L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   145684-42-0  REGISTRY
ED   Entered STN:  04 Feb 1993
CN   Magnesium alloy, base, Mg,Dy,Er,Gd,Li,Nd,Sm,Y,Yb,Zr (WE43)  (CA INDEX
     NAME)
OTHER NAMES:
CN   Elektron WE43
CN   Mg4Y3RE
CN   WE43
MF   Dy . Er . Gd . Li . Mg . Nd . Sm . Y . Yb . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS, TOXCENTER, USPATFULL

Component   Component      Component
             Percent    Registry Number
=========+=============+===============
    Mg          92            7439-95-4
    Y            4            7440-65-5
    Nd           2.2          7440-00-8
    Zr           0.6          7440-67-7
    Dy           0.3          7429-91-6
    Gd           0.2          7440-54-2
    Er           0.1          7440-52-0
    Li           0.1          7439-93-2
    Sm           0.1          7440-19-9
    Yb           0.1          7440-64-4


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

              91 REFERENCES IN FILE CA (1907 TO DATE)
              91 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    16.35      16.56
```

FILE 'CAPLUS' ENTERED AT 15:55:43 ON 07 FEB 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 7 Feb 2008 VOL 148 ISS 6
FILE LAST UPDATED: 6 Feb 2008 (20080206/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
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=> d his

     (FILE 'HOME' ENTERED AT 15:43:41 ON 07 FEB 2008)

     FILE 'REGISTRY' ENTERED AT 15:43:59 ON 07 FEB 2008
                E WE43/CN
L1            1 S E3

     FILE 'CAPLUS' ENTERED AT 15:55:43 ON 07 FEB 2008

=> s l1
L2           91 L1

=> d ti 1-91

L2   ANSWER 1 OF 91  CAPLUS  COPYRIGHT 2008 ACS on STN
TI   Implants, especially stents with cholesterol or cholesterol-ester-
     containing coating

L2   ANSWER 2 OF 91  CAPLUS  COPYRIGHT 2008 ACS on STN
TI   Magnesium alloy sliding parts with excellent wear resistance

L2   ANSWER 3 OF 91  CAPLUS  COPYRIGHT 2008 ACS on STN
TI   Liquid quenching solid-solution treatment and age hardening for
     high-strength magnesium alloys

L2   ANSWER 4 OF 91  CAPLUS  COPYRIGHT 2008 ACS on STN
TI   Absorbable magnesium alloy drug-eluting stent with multilayer
     controlled-release coatings, and its preparation method

L2   ANSWER 5 OF 91  CAPLUS  COPYRIGHT 2008 ACS on STN
TI   Mechanical Performance Evaluation of Cast Magnesium Alloys for Automotive
     and Aeronautical Applications
```

L2 ANSWER 6 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Friction stir processing of a cast WE43 Mg alloy

L2 ANSWER 7 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Determination of an empirical law of aluminum and magnesium alloys absorption coefficient during Nd:YAG laser interaction

L2 ANSWER 8 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI New magnesium alloys for transmission parts

L2 ANSWER 9 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Elevated temperature alloys - paths for further performance gains in AE44

L2 ANSWER 10 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Synchrotron x-ray microtomography study of the role of Y in corrosion of magnesium alloy WE43

L2 ANSWER 11 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Experimental study of magnesium and aluminium alloys absorption and keyhole evolution during laser interaction Nd: YAG interaction

L2 ANSWER 12 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mechanical properties of degradable magnesium implants in dependence of the implantation duration

L2 ANSWER 13 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Study of magnesium and aluminum alloys absorption coefficient during Nd:YAG laser interaction

L2 ANSWER 14 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mechanical spectroscopy of deformed WE43 magnesium alloys

L2 ANSWER 15 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Comparative study on wear behaviour of magnesium and aluminium alloys

L2 ANSWER 16 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Early stages of precipitation and microstructure control in Mg-rare earth alloys

L2 ANSWER 17 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Magnesium casting alloy technology and application

L2 ANSWER 18 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI DSC investigation on WE43 and Elektron 21 Mg alloys

L2 ANSWER 19 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI New engine coolant for corrosion protection of magnesium alloys

L2 ANSWER 20 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI A calorimetric study of phase evolution in a WE43 Mg alloy

L2 ANSWER 21 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Influence of a silane treatment on the corrosion resistance of a WE43 magnesium alloy

L2 ANSWER 22 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mono-and multi-layer magnesium alloys laser (ND:YAG) cladding using aluminum based powders

L2 ANSWER 23 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Electrochemical behaviour of a magnesium alloy containing rare earth elements

L2 ANSWER 24 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Implant for releasing an active substance into a vessel through which a body medium flows and use to implant drugs into blood vessels for the treatment of tumors

L2 ANSWER 25 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Magnesium alloys laser (Nd:YAG) cladding with side injection of aluminium based powder

L2 ANSWER 26 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Radio-opaque marker for medical implants

L2 ANSWER 27 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Excimer laser surface treatment of magnesium alloy WE43 for corrosion resistance improvement

L2 ANSWER 28 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Corrosion behaviour of laser-melted magnesium alloys

L2 ANSWER 29 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The recrystallization behavior of AZ31 and WE43

L2 ANSWER 30 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Texture evolution of five wrought magnesium alloys during route A equal channel angular extrusion: Experiments and simulations

L2 ANSWER 31 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Comparative observation of the microstructure of Mg-Al-Zn and Mg-Y-RE-Zr wrought alloys

L2 ANSWER 32 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Metallurgical background to the development of creep resistant gravity casting magnesium alloys

L2 ANSWER 33 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Distribution of yttrium and neodymium in magnesium melts between metal and magnesium fluoride containing salt

L2 ANSWER 34 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI In vivo corrosion of four magnesium alloys and the associated bone response

L2 ANSWER 35 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Environment-assisted cracking of cast WE43-T6 magnesium

L2 ANSWER 36 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Recrystallization behaviour of two magnesium alloys

L2 ANSWER 37 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Significance of stable and metastable phases in high temperature creep resistant magnesium-rare earth base alloys

L2 ANSWER 38 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Ignition resistance of various magnesium alloys

L2 ANSWER 39 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Magnesium alloys (WE43 and ZE41) characterization for laser applications

L2 ANSWER 40 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Effects of precipitation processes on damping and elastic modulus of WE 43 magnesium alloy

L2 ANSWER 41 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Anodic oxide film formation at magnesium alloy WE43

L2 ANSWER 42 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Magnesium alloys laser (Nd:YAG) cladding and alloying with side injection of aluminum powder

L2 ANSWER 43 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Electrochemical Studies of AC/DC Anodized Mg Alloy in NaCl Solution

L2 ANSWER 44 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Characterization of Oxide Films Formed on Mg-Based WE43 Alloy Using AC/DC Anodization in Silicate Solutions

L2 ANSWER 45 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Hardening precipitation in a Mg-4Y-3RE alloy

L2 ANSWER 46 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Application of plasma deposited organosilicon thin films for the corrosion protection of metals

L2 ANSWER 47 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Effect of alloying elements on the ignition resistance of magnesium alloys

L2 ANSWER 48 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mechanical properties of aged Mg-4Y-3RE alloy

L2 ANSWER 49 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Improving the performance of Mg-rare earth alloys by the use of Gd or Dy additions

L2 ANSWER 50 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Influence of ECAP on tensile properties of ZK 60 and WE 43 magnesium alloys

L2 ANSWER 51 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Influence of rare earth elements and minor additions on properties and performance of magnesium-yttrium alloys in critical aerospace applications

L2 ANSWER 52 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Tensile properties at room temperature to 823 K of Mg-4Y-3RE alloy

L2 ANSWER 53 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Residual stress measurements using neutron diffraction in magnesium alloy laser welded joints

L2 ANSWER 54 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Thin-walled Mg structural parts by a low-pressure sand casting process

L2 ANSWER 55 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Effect of foundry processing on the corrosion performance of high purity magnesium sand casting alloys

L2 ANSWER 56 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Precipitation processes in magnesium-heavy rare earth alloys during ageing at 300°C

L2 ANSWER 57 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mechanical properties in structural magnesium alloys under dynamic tensile loading

L2 ANSWER 58 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Equal channel angular processing of magnesium alloys

L2 ANSWER 59 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Structural aspects of high performance Mg alloys design

L2 ANSWER 60 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Laser welding of AZ91 and WE43 magnesium alloys for automotive and aerospace industries

L2 ANSWER 61 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Creep of a heat treated Mg-4Y-3RE alloy

L2 ANSWER 62 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Ductility enhancement in magnesium alloys under dynamic loading

L2 ANSWER 63 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Superplasticity of a particle-strengthened WE43 magnesium alloy

L2 ANSWER 64 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Grain boundary effects on the behavior of WE43 magnesium castings in simulated marine environment

L2 ANSWER 65 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Precipitation reactions in two magnesium alloys containing rare earths

L2 ANSWER 66 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI CO2 laser welding of magnesium alloys

L2 ANSWER 67 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Factors affecting the corrosion performance of Elektron WE43 and WE54 magnesium casting alloys

L2 ANSWER 68 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The effect of various quenchants and thermal cycle modifications upon the residual stress levels in Elektron WE43 castings after heat treatment

L2 ANSWER 69 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Magnesium alloys in new aeronautic equipment

L2 ANSWER 70 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The corrosion protection afforded by rare earth conversion coatings applied to magnesium

L2 ANSWER 71 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Kinetics of the development of a nonchromate conversion coating for magnesium alloys and magnesium-based metal matrix composites

L2 ANSWER 72 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Coated substrate and process for production thereof

L2 ANSWER 73 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Microstructure/property relationships in two magnesium-rare earth alloys

L2 ANSWER 74 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Experimental study of a structural magnesium alloy with high absorption energy under dynamic loading

L2 ANSWER 75 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Development of WE43 magnesium alloy by thermomechanical treatment

L2 ANSWER 76 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Investigation of the microstructure and properties of castable neodymium- and yttrium-bearing magnesium alloys at elevated temperatures

L2 ANSWER 77 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Advances in the application of magnesium in helicopter gearcases

L2 ANSWER 78 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI New magnesium alloys and protections in new helicopters

L2 ANSWER 79 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Development of aerospace casting in WE43 poured by the DPSC process

L2 ANSWER 80 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Mechanical properties and fluidity of magnesium cast alloys regarding their wall thickness dependence in sand and pressure die casting processes

L2 ANSWER 81 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The development of Elektron magnesium alloys for aeroengines

L2 ANSWER 82 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Elevated temperature behavior of rapidly solidified magnesium alloys containing rare earths

L2 ANSWER 83 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The effect of heat treatment and composition on the microstructure and properties of cast magnesium-yttrium-rare earth alloys

L2 ANSWER 84 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI New corrosion resistant wrought magnesium alloys

L2 ANSWER 85 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The development of magnesium materials for aerospace and specialty applications

L2 ANSWER 86 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The development of magnesium materials for aerospace and specialty applications

L2 ANSWER 87 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI New corrosion resistant wrought magnesium alloys

L2 ANSWER 88 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Creep fracture in a magnesium-yttrium-rare earth alloy

L2 ANSWER 89 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI The effect of heat treatment and composition on the microstructure and properties of cast magnesium-yttrium-rare earth alloys

L2 ANSWER 90 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI A high strength, corrosion resistant magnesium alloy for aerospace castings

L2 ANSWER 91 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
TI Localized corrosion initiation on magnesium alloys

=> d ibib abs 91

L2 ANSWER 91 OF 91 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1993:64759 CAPLUS
DOCUMENT NUMBER: 118:64759
TITLE: Localized corrosion initiation on magnesium alloys
AUTHOR(S): Mitrovic-Scepanovic, V.; Brigham, R. J.
CORPORATE SOURCE: Met. Technol. Lab., CANMET, Ottawa, ON, K1A 0G1, Can.
SOURCE: Corrosion (Houston, TX, United States) (1992), 48(9), 780-4
CODEN: CORRAK; ISSN: 0010-9312
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Expts. were carried out to evaluate a critical go/no-go chloride concentration for pit initiation in cast and wrought Mg alloys by placing coupons 38 by 38 mm in 100 mL test solution (0.1 M NaOH containing 0.005, 0.01, or 0.02 M NaCl) to which 10 mL of 30% H2O2 was added in a tall, narrow 180 mL beaker to retain the sample in the near-vertical position. The coupons were exposed at room temperature for 24 h, and the corrosion products were removed with a solution of 20% CrO3 plus 1% AgNO3. The coupons were examined for pits on the the flat surfaces away from the edges, and the percentage of coupons showing pitting attack was reported. The critical chloride concentration which causes pit initiation on a number of Mg alloys is 2+10-3-2+10-2 M NaCl. Exfoliation is observed in unalloyed Mg above a critical chloride concentration, but this morphol. is not seen in Mg alloys. Localized attack is observed only when the free corrosion potential adopts a value active to the H line.

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